

Title (en)  
Resin-moulded semiconductor hybrid module and manufacturing method thereof

Title (de)  
Hybrid-Halbleitermodul aus vergossenem Kunstharz und Verfahren zuseiner Herstellung

Title (fr)  
Module sémiconducteur de type hybride moulé en résine et procédé de sa fabrication

Publication  
**EP 0936671 A1 19990818 (EN)**

Application  
**EP 99101733 A 19990211**

Priority  
JP 2949198 A 19980212

Abstract (en)  
A semiconductor device includes a main circuit part having a semiconductor device formed on an electrode plate (13) of a lead frame and a control circuit part having protective functions, which is integrally molded by a resin mold part (30) into an integral mold structure. <IMAGE>

IPC 1-7  
**H01L 25/16**; **H01L 23/433**

IPC 8 full level  
**H01L 25/07** (2006.01); **H01L 23/433** (2006.01); **H01L 25/16** (2006.01); **H01L 25/18** (2006.01)

CPC (source: EP KR US)  
**H01L 23/4334** (2013.01 - EP US); **H01L 23/52** (2013.01 - KR); **H01L 25/165** (2013.01 - EP US); **H01L 24/45** (2013.01 - EP US); **H01L 24/48** (2013.01 - EP US); **H01L 2224/45015** (2013.01 - EP US); **H01L 2224/45124** (2013.01 - EP US); **H01L 2224/45144** (2013.01 - EP US); **H01L 2224/48091** (2013.01 - EP US); **H01L 2224/48137** (2013.01 - EP US); **H01L 2224/48247** (2013.01 - EP US); **H01L 2224/48257** (2013.01 - EP US); **H01L 2224/73265** (2013.01 - EP US); **H01L 2924/01079** (2013.01 - EP US); **H01L 2924/1305** (2013.01 - EP US); **H01L 2924/13055** (2013.01 - EP US); **H01L 2924/13091** (2013.01 - EP US); **H01L 2924/14** (2013.01 - EP US); **H01L 2924/181** (2013.01 - EP US); **H01L 2924/19041** (2013.01 - EP US); **H01L 2924/19107** (2013.01 - EP US)

Citation (search report)  
• [XA] EP 0774782 A2 19970521 - MITSUBISHI ELECTRIC CORP [JP]  
• [A] US 5699609 A 19971223 - WIELOCH CHRISTOPHER J [US]  
• [A] US 5077595 A 19911231 - FUKUNAGA MASANORI [JP]  
• [A] PATENT ABSTRACTS OF JAPAN vol. 097, no. 003 31 March 1997 (1997-03-31)  
• [A] OKAWA K ET AL: "A MODEL OF THREE PHASE INVERTER HYBRID IC WITH 60V/150A MOSFET", RECORD OF THE INDUSTRY APPLICATIONS CONFERENCE (IAS), ORLANDO, OCT. 8 - 12, 1995, vol. 1, no. CONF. 30, 8 October 1995 (1995-10-08), INSTITUTE OF ELECTRICAL AND ELECTRONICS ENGINEERS, pages 898 - 903, XP000551010

Cited by  
EP1291917A3; EP1032042A3; EP1291916A3; SG89386A1; EP1143514A3; EP1492165A3; EP1895584A1; EP1160861A3; CN103515328A; EP2680305A3; EP1424728A1; CN1324699C; FR2826181A1; DE10221891B4; DE10221891C5; US9673122B2; WO2004049433A1; US7102896B2; US9978695B1; US6833609B1; US8866278B1; US9871015B1; US10665567B1; US7033865B2; US9691734B1; US10546833B2; US9947623B1; US10410967B1; US11043458B2; US8154111B2; US10014240B1; US7768139B2; US9667106B2; US9704725B1; US10090228B1; US10811341B2; US11869829B2

Designated contracting state (EPC)  
CH DE LI

DOCDB simple family (publication)  
**EP 0936671 A1 19990818**; **EP 0936671 B1 20030507**; DE 69907537 D1 20030612; DE 69907537 T2 20040401; JP H11233712 A 19990827; KR 19990072605 A 19990927; US 6291880 B1 20010918

DOCDB simple family (application)  
**EP 99101733 A 19990211**; DE 69907537 T 19990211; JP 2949198 A 19980212; KR 19990004915 A 19990211; US 24800099 A 19990210